Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended) A method of processing a data signal comprising symbols each representing a plurality of data bits, the method comprising:

demodulating the data signal to determine ~~the symbols;~~ a hard value of each symbol;

mapping the hard value of each of the symbols to a plurality of data ~~bits;~~ bits, each data bit having an assigned confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence value; and

~~assigning to each bit in a symbol a confidence value determined from constant confidence values which are based on the mapping; and~~

effecting convolutional decoding of a bit stream associated with the assigned confidence values.

2.   (Currently Amended) A method according to claim 1 wherein the ~~step of assigning a confidence value comprises~~ mapping the hard value of each of the symbols to ~~binary~~ a plurality of data bits includes ~~by means of~~ using a Gray code.

3.   (Currently Amended) A method according to claim 1, further comprising:

~~further comprising~~ incorporating data ~~from the step of assigning~~ on the mapping in a look-up table for reference.

4.   (Previously presented) A method according to claim 1 comprising re-coding hard decisions as an (I,Q) pair and taking soft decisions therefrom.

5.   (Previously Presented) A method according to claim 1 comprising demodulation by decision feedback equalization with whitening matched filtering.

6.   (Previously Presented) A method according to claim 1 comprising using a digital processor for equalization.

7.   (Previously Presented) A method according to claim 1 using dedicated signal processing hardware for equalization.

8.   (Previously presented) A method according to claim 1 comprising de-interleaving, de-puncturing and incremental redundancy steps before convolutional decoding.

9.   (Currently Amended) A non-transitory computer program product having contents directly loadable into the internal memory of a digital computer, the contents comprising software code portions for processing a data signal, the data signal comprising symbols each representing a plurality of data bits, when said ~~product is~~ code portions are run by a computer carrying out the steps of:

demodulating the data signal to determine a hard value of each of the symbols;

mapping the hard value of each of the symbols to a plurality of data ~~bits;~~ bits, each data bit having an assigned confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence value; and

~~assigning to each bit in a symbol a confidence value determined from constant confidence values which are based on the mapping; and~~

effecting convolutional decoding of a bit stream associated with the assigned confidence values.

10.   (Currently Amended) An apparatus for processing a data signal comprising symbols each representing a plurality of data bits, the apparatus comprising:

means to receive the data signal;

means to demodulate the data signal to determine a hard value of each of the symbols;

mapping means for mapping the hard value of each symbol to a plurality of bits, each bit having an assigned confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence value; and for assigning to each bit in a symbol a confidence value determined from constant confidence values which are based on the mapping; and

means for effecting convolutional decoding of a bit stream associated with the assigned confidence values.

11.   (Currently Amended) An apparatus according to claim 10 wherein the mapping means is adapted to map the hard value of each of the symbols to binary a plurality of data bits by a Gray code.

12.   (Currently Amended) An apparatus according to claim 10, further comprising a look-up table incorporating data from on the mapping means. mapping.

13.   (Previously Presented) An apparatus according to claim 10 comprising means to re-code hard decisions as an (I,Q) pair and means to take soft decisions therefrom.

14.   (Previously Presented) An apparatus according to claim 10 comprising demodulation by decision feedback equalization with whitening matched filtering.

15.   (Previously Presented) An apparatus according to claim 10 comprising a digital processor for equalization.

16.   (Previously Presented) An apparatus according to claim 10 comprising dedicated signal processing hardware for equalization.

17.　　(Previously Presented)　An apparatus according to claim 10 comprising means to de-interleave, depuncture, and effect incremental redundancy before convolutional decoding.

18.　　(Canceled)

19.　　(Canceled)

20.　　(Currently Amended)　The method of claim 1, wherein the step of ~~assigning a confidence value to each bit in a symbol~~ mapping includes assigning ~~a~~ an increased confidence value to a bit if bits in a same position in adjacent symbols are the same as the bit. ~~based upon the position of the bit in its symbol.~~

21.　　(Currently Amended)　The apparatus of claim 10, wherein the mapping means assigns a confidence value to each bit in the symbols by assigning ~~a~~ an increased confidence value ~~based upon the position of the bit in its symbol.~~ to a bit if bits in a same position in adjacent symbols are the same as the bit.

22.　　(Currently Amended)　The non-transitory computer program product of claim 9 wherein ~~assigning confidence values to bits~~ the mapping comprises retrieving confidence values from a look-up table.

23.　　(Currently Amended)　The non-transitory computer program product of claim 22 wherein the ~~confidence values~~ mapping further ~~comprise confidence values based on~~ comprises interpolation between confidence values in the look-up table.

24.　　(Currently Amended)　The method of claim 1 wherein the ~~confidence values~~ mapping further ~~comprise confidence values based on~~ comprises interpolation between confidence values stored in a look-up table.

25.   (Currently Amended) The apparatus of claim 10 wherein the <u>mapping means is configured to interpolate</u> ~~confidence values further comprise confidence values based on interpolation~~ between <u>confidence</u> values stored in a look-up table.

26.   (Currently Amended) An apparatus for processing a data signal comprising symbols representing data bits, the apparatus comprising:

a demodulator configured to extract <u>a hard value of each of</u> the symbols from the signal;

a symbol mapper configured to map <u>the hard value of</u> each symbol to a respective plurality of bits<u> each having a confidence value based on a mapping table defining for each symbol hard value a plurality of data bits each having an assigned confidence value;</u> ~~and to assign to each bit in a symbol a confidence value determined from constant confidence values which are based on the mapping;~~ and

a convolutional decoder configured to decode a bit stream associated with the assigned confidence values.

27.   (Currently Amended) The apparatus of claim 26 wherein the symbol mapper is configured to map <u>the hard value of each of the</u> symbols <u>to the respective plurality of bits</u> using a Gray code.

28.   (Previously Presented) The method of claim 1 wherein the data signal comprises 8-PSK signals and each confidence value is determined from a set $[-\alpha, -1, 1, \alpha]$, where α is a constant.

29.   (Previously Presented) The method of claim 28 wherein the value of α is 1.7.